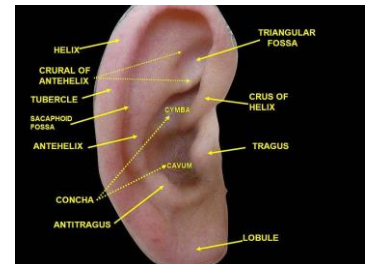


Introduction

- **W**ash hands, **I**ntroduce self, **P**atients name & DOB & what they like to be called, **E**xplain examination and get consent
- Explain procedure and that they must stay completely still when you use the otoscope
- Position patient – seat at same level as you with access to both ears
- Note and remove any hearing aids
- Get otoscope, speculum, 512Hz tuning fork



Inspection

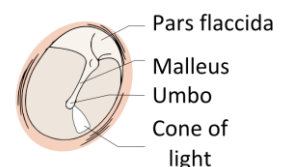
- General inspection: symmetry, position (**low set = genetic syndromes**), shape
- Close ear inspection:
 - Skin in front and behind ear: skin tags, erythema, scars, preauricular sinuses/pits
 - Pinna: any skin changes (**e.g. neoplasia**), deformities (**e.g. accessory auricle**), scars, erythema (**erysipelas, chondritis**), perichondrial haematoma (**trauma**)
 - External auditory meatus: erythema, pus/discharge (**otitis externa**)
 - Mastoid: erythema/swelling (**mastoiditis**)

Palpation

- Tug pinna gently (**tenderness = mastoiditis**)
- Palpate mastoid (**tenderness = mastoiditis**)
- Feel for pre/post-auricular lymph nodes (**infections**)

Otoscopy

- Apply speculum to otoscope and turn on light
- Hold the otoscope like a pencil (in your right hand for their right ear and vice versa) with the handle pointing anteriorly
- Start with non-affected ear
- Pull the pinna up and backwards (down and backwards in children) with your other hand to straighten the external auditory canal
- Insert the speculum tip into the external auditory meatus
- Rest the ulnar border of your hand on their cheek to stabilise it
- Gently advance the speculum while looking through the otoscope
- Look at
 - Auditory canal – look for: wax, foreign bodies, skin quality (**thick white growth = cholesteatoma**), erythema/discharge (**otitis externa**)
 - Tympanic membrane
 - Colour – should be pinkish-grey (**red = infection; scarred = tympanosclerosis**)
 - Structure – look for perforation, tympanostomy (grommet), bulging (**infection**) or retraction (**Eustachian tube dysfunction**)
 - Fluid (**effusion, haemotympanum**)
 - Behind tympanic membrane for any visible features (pars tensa, pars flaccida, handle/lateral process of malleolus, cone of light)
- Slowly withdraw the otoscope
- Dispose of speculum in clinical waste bin



Hearing tests

- **Rough hearing test:** ask patient to occlude one of their ears and gently rub your index finger and thumb together. Move your hand from peripherally towards their ear and ask them to tell you when they hear it. Repeat on other side.
- **Weber's test:** use a 512Hz tuning fork. Twang the long ends and place the round base of the fork on the patient's forehead between their eyes. Ask them if one side is louder than the other (**if one side is louder, either that side has a conductive deficit, or the contralateral side has a sensorineural deficit - Rinne's test can then confirm which**).
- **Rinne's test:** use a 512Hz tuning fork. Twang the long ends and place the round base of the fork on the patient's mastoid process. Ask them to tell you when the sound stops. Then, place the long ends near the patient's ear. Ask them if they can then hear it again – air conduction should be louder than bone conduction (**if they cannot hear it again, there is a conductive deficit in that ear**).

Lastly

- Test facial nerve function if serious pathology was seen

To Complete

- Thank patient
- Summarise and suggest further investigations e.g. audiometry

Common pathology

- **Otitis externa (Swimmers ear)** – inflamed swollen narrow canal with discharge/flaking skin. Treated with Abx-steroid eardrops (if acute) or anti-fungal-steroid eardrops (if chronic).
- **Acute otitis media** – swollen red tympanic membrane. May be effusion or perforation. Treated with oral Abx e.g. amoxicillin.
- **Otitis media with effusion (Glue ear)** – fluid level behind tympanic membrane due to Eustachian tube dysfunction. Observed for at least 3 months as many resolve, but may require tympanostomy.
- **Cholesteatoma** – slowly expanding growth of squamous epithelium that can extend into surrounding tissues. Treated by excision
- **Perforation** – hole in eardrum. Most heal spontaneously.
- **Wax**